BAF Vacuum Control

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BAF Vacuum Control

- **PLC-based (Allen-Bradley ControlLogix).**
- **Control gate valves though hard-wired interlocks from gauges and pumps (24 Vdc).**
- **Supply beam permit link signal.**
- **Generate vacuum interlocks for other systems as required.**

Devices and Quantities Building 930UEB

- **1 Granville-Phillips GP303 gauge controller**

- **2 hot cathode ion gauges (IGs)**

- **1 Convectron gauge (TC)**

- **1 AGS ion pump power supply (IPPS)**

- **2 ion pumps**

- **2 gate valves**

- **1 fast valve**

Devices and Quantities Building 957

- **4 Balzers TPG 300 gauge controllers**
- **8 Balzers IKR 060 cold cathode gauges**
- **8 Balzers TPR 018 Pirani gauges**
- **5 Physical Electronics (PHI) MPC ion pump controllers**
- **10 PHI ion pumps**
- **4 VAT gate valves**
- **1 Fast valve sensor**

BAF Gauge Controllers

- **Balzers TPG 300 Controllers.**
  - **Two (2) Combination Boards.**
    - **1 each Pirani and Cold Cathode circuit.**
  - **Interface Board.**
    - **RS-232 / RS-422 port and Relay interface.**

BAF Ion Pump Controllers

- **Physical Electronics (PHI) MPC**
  - **Dual power supply**
  - **Configurable Set points**
    - **Relay outputs wired to PLC inputs**
  - **RS-232 Interface to Controls system**
  - **Analog current and voltage outputs (not used at this time)**

BAF Gate Valves

- **VAT gate valves**
  - **24 Vdc solenoid**
    - **Energized = valve open**
    - **Controlled by PLC output**
  - **Open and Closed limits switches**
    - **Wired to PLC inputs**

BAF PLC I/Os

- **~34 Inputs from gauges, ion pumps and valves.**

- **4+ Valve control Outputs.**

- **Equipment Interlock Outputs.**

- **Beam Permit Link Output.**

BAF Controls Interfaces

- **RS-232 Interface for ion pump and gauge controllers**
  - **Pressure Readings**
  - **Voltage Readings (ion pump only)**
  - **High voltage On/Off**
  - **Set point control**

BAF Controls Interfaces, Continued

- **Ethernet Interface for Valve Operation**
  - **Open/Close control**
  - **Open/Close/Fault status**

Beam Permit System Inputs

- **Booster**
  - **Gate valves and Fast Valve**
- **BAF**
  - **Gate valves**

Booster-side Modifications

- **Install GP303 gauge controller.**
- **Use spare Ion Pump power supply outputs.**
- **Install Fast Valve Controller.**
- **Insert Fast Valve into logic.**
- **Insert Gate Valve into logic.**
- **Upgrade existing VME RS-232 controller (?).**